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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,542	07/10/2003	William D. Buchanan	AVI 1010-02US	2814
28327	7590	08/25/2005		
			EXAMINER	
			SQUIRES, BRETT S	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/616,542	BUCHANAN ET AL.
	Examiner	Art Unit
	Brett S. Squires	2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 13 June 2005.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-42 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-42 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 13 June 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

1. The corrections made to the drawing submitted in the amendment filed on June 13, 2005 have been received and are approved by the examiner.

***Priority***

2. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-39 of this application. The examiner can find no mention in page 8 line 13 to page 14 line 3 of the provisional application serial number 60/212,066 of "the sum of the secondary power port power ratings establishes an aggregate output power rating and wherein the aggregate output power rating can exceed a designated power limit," and "a system controller circuit configured to regulate the power distributed by at least one secondary power port of the plurality of secondary power ports such that if the sum of the power ratings of the secondary power ports simultaneously used to charge batteries exceeds the designated power limit, the power received from the power source does not exceed the designated power limit." As further evidence that the above stated limitations of the present non-provisional application are not supported by the provisional application serial number 60/212,066, the examiner would like to point out that the provisional application claims "a poly-phase utility port for connecting the system with a utility," "a DC-DC converter or a multiplicity of DC-DC converters residing in modules containing DC-ports for connection to electric powered vehicles," and "a system controller for allocating the power to the available

modules to maintain the maximum summation of power to be no greater than the utility rating."

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 9, 18, 20, and 33-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Chai (US 6,225,776).

Chai discloses a charging station for electric powered vehicles having a primary power port configured to receive power from the power source ("Power Supplying Circuit" figures 1-2 ref# 10 and col. 2 lines 30-34), a plurality of secondary power ports configured to distribute power from the primary power port to the plurality of batteries ("Charging Socket" figures 1-3 ref# 30, col. 1 lines 12-36, and col. 2 lines 39-65), each secondary power port being characterized by a power rating ("8 Amps" col. 3 lines 29-51), where the sum of the secondary power port power rating establishes an aggregate output power rating and wherein the aggregate output power rating can exceed a designated power limit (col. 3 lines 29-67 and col. 4 lines 1-23), a system controller circuit configured to regulate the power distributed by at least one secondary power port of the plurality of the secondary power ports such that if the sum of the power ratings of

the secondary power ports simultaneously used to charge batteries exceeds the designated power the power received from the power source does not exceed the designated limit ("Rated Current Setting Unit" and "Processing Unit" figures 1-2 ref# 50, 60, col. 3 lines 1-67, and col. 4 lines 1-23).

[The examiner would like to point out that the following limitation recited in claim 1, "the sum of the power ratings of the secondary power ports simultaneously used to charge batteries exceeds the designated power limit," does not provide any limitation on the power being consumed by the secondary power ports as the batteries are being charged, it merely requires the secondary power ports in use have a power rating greater than the designated limit. The battery-charging example in Chai (See figure 4) discloses four charging sockets each with a power rating of 8 amps and a total charging current limit of 20 amps. The first distribution shows sockets one, two, and three are being used to charge vehicle batteries, these sockets have a combined current rating of 24 amps thus exceeding the total charging current limit of 20 amps. However the three sockets being used are only drawing a total of 18 amps for battery charging, so that the power received from the utility does not exceed the 20-amp limit.]

Regarding Claim 6:

Chai discloses the processing unit (figures 1-2 ref# 60) contains a CPU (figure 2 ref# 60) that is connected to the rated current setting unit (figures 1-2 ref# 50) and according to the output signals from the current converters (figure 2 ref# 42) and the

rated current value as set by the setting unit the CPU control the trigger member (figure 2 ref# 21) to control in turn the relay switched (figure 2 ref# 22) and the current flow through the charging sockets.

Regarding Claim 9:

Chai disclose the system controller is configured such that the designated power limit varies (col. 3 lines 1-51).

Regarding Claim 18:

Chai discloses the power supplying circuit operates in a known manner to convert AV power into DC power (col. 2 lines 30-34).

5. Claims 40-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Gilbert (US 6,357,011).

Gilbert discloses a bus-powered computer peripheral with supplement battery power to overcome bus-power limit having a primary power port configured to receive power from the power source ("USB Port" figure 1 ref# 28), a plurality of secondary power ports configured to distribute power from the primary power port to the plurality of loads ("the connections between the voltage regulator and the batteries and the connection between the voltage regulator and the primary function module" figures 1-2, col. 3 lines 10-20, and col. 4 lines 1-12), each secondary power port being characterized by a power rating (col. 3 lines 10-20 and batteries have power rating such

as 1.5 volts for 2080 mAh) where the sum of the secondary power port power ratings establishes an aggregate output power rating (sum of the battery power ratings and the primary function module power rating), a system controller circuit configured to regulate the power distributed by at least one secondary power port of the plurality of secondary ports such that the power received from the power source does not exceed a designated power limit ("interface-controller module" figures 1-2 ref# 44, col. 1 lines 54-67, col. 2 lines 1-10, col. 3 lines 10-41, 65-67, and col. 4 lines 1-12), where the aggregate power rating can exceed the designated power rating (col. 1 lines 11-67, col. 2 lines 1-10, and col. 3 lines 10-20).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being obvious over Chai (US 6,225,776) and Matsko (US 4,351,013).

Chai discloses the above stated charging station for electric powered vehicles having a primary port with a designated power limit configured to receive power from a commercial AC power utility, but does not disclose a second primary power port configured to receive power from the power source.

Matsko discloses an electrical distribution system having two primary sources of electrical energy (figure 3 ref# 56,58 and col. 4 lines 25-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chai to include having two primary sources of electrical energy such as that taught by Matsko in order to back-up power to the loads from one of the sources when the other source has faulted (Matsko col. 4 lines 25-67).

8. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being obvious over Chai (US 6,225,776) and Carson (US 6,842,668).

Chai discloses the above stated charging station for electric powered vehicles having a system controller configured for recharging batteries, but does not disclose the system controller is configured to transmit command signals appropriate to direct load controllers to regulate power drawn by the loads and the system controller is configured such that the designated power limit varies in accordance with an external signal.

Carson discloses a remotely accessible power controller for building lighting having a power controller for load shedding, selectively turning off and/or dimming load in response to command signal transmitted from utility providers, (figure 4 ref# 10 and col. 5 lines 54-67 and col. 6 lines 1-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Smith to include a power controller such as that

disclosed by Carson in order to automatically disconnect or reduce loads in accordance with specified power consumption limits.

9. Claim 14, 16-17, 21-23,36, and 38-39 is rejected under 35 U.S.C. 103(a) as being obvious over Chai (US 6,225,776) and Gilbert (US 6,357,011).

Chai discloses the above stated charging station for electric powered vehicles having a system controller configured for recharging batteries and a plurality of charging sockets, but does not disclose the system controller is configured to operate at least one secondary power port of the plurality of secondary power ports bidirectionally.

Gilbert discloses a bus-powered computer peripheral with supplement battery power to overcome the bus-power limit having a controller (figures 1-2 ref# 44) configured to operate a rechargeable battery (figures 1-2 ref# 48) bidirectionally (col. 3 lines 10-67, and col. 4 lines 1-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chai to include configuring the system controller to operate the rechargeable batteries connected to the charging sockets in a bidirectional manner such as that taught by Gilbert in order to overcome the power limits associated with the charging station (Gilbert col. 1 lines 54-67 and col. 2 lines 1-10).

Regarding Claims 22-23 and 38-39:

Gilbert discloses a voltage regulator configured to regulate power drawn by the batteries (figures 1-2 ref# 46), and a controller configured to transmit command signals

appropriate to direct the voltage regulator of the batteries to regulate the power drawn by the batteries (figures 1-2 ref# 44, col. 1 lines 54-67, col. 2 lines 1-10, col. 3 lines 10-41, 65-67, and col. 4 lines 1-12).

10. Claim 15 and 37 is rejected under 35 U.S.C. 103(a) as being obvious over Chai (US 6,225,776) and Gilbreth (US 2003/0007369).

Chai discloses the above stated charging station for electric powered vehicles having a system controller configured for recharging batteries and a plurality of charging sockets, but does not disclose the system controller is configured to operate the primary power port bi-directionally.

Gilbreth discloses a power controller ("CPU" figure 2 ref# 32) that operates the power converter (figure 1 ref# 16) connected to the utility bi-directionally (page 2 paragraphs 29-33).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chai to include configuring the system controller to operate the primary power port in a bi-directional manner such as that taught by Gilbreth in order to transmit excess power from discharging batteries on to the grid and sell the power back to the utility company.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being obvious over Chai (US 6,225,776) and Hunter (US 5,724,237).

Chai discloses the above stated charging station for electric powered vehicles having a power supplying circuit for converting AC power into DC power, but does not disclose but does not disclose the power supplying circuit includes a DC to DC converter.

Hunter discloses a DC to DC converter for powering a load (figure 1 ref# 15,16 and abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified to Gilbert to include a DC to DC converter such as that disclosed by Hunter in order to allow the voltage regulator to rechargeable batteries with voltage ratings other than 5 volts, this allows the user to use commonly available batteries.

12. Claims 24-32 are rejected under 35 U.S.C. 103(a) as being obvious over Tseng (5,631,536) and McKenzie (6,003,139) and Henze (5,926,004).

Tseng discloses a plurality of battery ports, each battery port being configured to electrically connect to at least one of the plurality of batteries, a utility port configured to electrically connect to the utility, and to provide power from the utility to the plurality of battery ports (col. 4 lines 42-44), a system controller configured to control the power distribution between the utility port and the plurality of battery ports, wherein the controller controls the power distribution such that the plurality of batteries are charged using power from the utility (col. 4 lines 44-49), but does not disclose a utility at a power level not exceeding the maximum power level and a first charging module, including a

first power converter connecting to the first battery port, a second power converter connecting to the second battery port, a crossover switch switchably connecting the first power converter to the second battery port, and a module controller configured to control the operation of the crossover switch and establish the power distribution between the first and second battery ports.

McKenzie discloses the power level of the output power is controlled so that it does not exceed a maximum power level which is based on the level of the control signal (figure 1, col. 3 lines 40-67, and col. 4, lines 1- 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Tseng to include a power level not exceeding the maximum power level as taught by McKenzie in order to limit the output power and preventing permanent damage to the power supply circuit.

Henze discloses a first charging module, including a first power converter connecting to the first battery port, a second power converter connecting to the second battery port, a crossover switch switchably connecting the first power converter to the second battery port, and a module controller configured to control the operation of the crossover switch and establish the power distribution between the first and second battery ports (figure 4 and col. 2 lines 51-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Tseng and McKenzie to include a first power converter connecting to the first battery port, a

second power converter connecting to the second battery port, a crossover switch switchably connecting the first power converter to the second battery port, and a module controller configured to control the operation of the crossover switch and establish the power distribution between the first and second battery ports such as that taught by Henze for the purpose of limiting the output power and preventing permanent damage to the power supply circuit.

Regarding Claim 24:

McKenzie shows the utility port is configured to receive power from utilities at a plurality of power levels (col. 4 lines 33-35).

Regarding Claim 26:

Henze shows the first power converter of the first charging module connects to the first battery port through a first connecting switch of the first charging module; the second power converter of the first charging module connects to the second battery port through a second connecting switch of the first charging module; and the module controller of the first charging module is configured to control the operation of the first and second connecting switches and establish the power distribution between the first and second battery ports (col. 3 lines 49-60).

Regarding Claim 27:

Henze shows the first charging module is configured to receive DC power from the utility port; the first power converter of the first charging module is a DC-DC power converter; and the second power converter of the first charging module is a DC-DC power converter (col. 4 lines 1-7).

Regarding Claim 28:

Henze shows the module controller for the first charging module is separate from the system controller, and wherein the system controller and the module controller for the first charging module communicate to determine the operation of the crossover switch and the first and second connecting switches (col. 6 lines 24-32).

Regarding Claim 29:

Henze shows a first power converter connecting to the third battery port; a second power converter connecting to the fourth battery port, a first switch switchably connecting the first power converter to the fourth battery port; and a module controller configured to control the operation of the first switch and establish the power distribution between the first and second battery ports (col. 6 lines 22-38).

Regarding Claim 30:

Henze shows the utility port is configured to provide DC power to each of the charging modules via a distribution bus; the first power converter of the first charging module is a DC-DC power converter; the second power converter of the first charging

module is a DC-DC power converter; the first power converter of the second charging module is a DC-DC power converter; and the second power converter of the second charging module is a DC-DC power converter (col. 4 lines 10-13).

Regarding Claim 31:

Henze shows an AC rectifier configured to receive AC current from the utility port and configured to provide DC current to the distribution bus (col. 4 lines 6-13).

***Response to Arguments***

13. Applicant's arguments filed June 13, 2005 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 1-23 and 33-42 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the combination of Tseng, McKenszie, and Henze fails to disclose "a system controller configured to control the power distribution between the utility port and the plurality of secondary power ports, wherein if the sum of the power rating of the secondary power ports used to charge the plurality of batteries exceeds the maximum power level, the system controller controls power distribution such that the plurality of batteries are simultaneously charged using power from the utility at a power level not exceeding the maximum power level," the examiner respectfully points out that "the sum of the power ratings of the secondary power ports simultaneously used to charge batteries exceeds the designated power limit," does not

provide any limitation on the power being consumed by the secondary power ports as the batteries are being charged, it merely requires the secondary power ports in use have a power rating greater than the designated limit. The examiner would like to further refer the applicant to the above stated example battery-charging example in Chai. Chai discloses four charging sockets each with a power rating of 8 amps and a total charging current limit of 20 amps. The first distribution shows sockets one, two, and three are being used to charge vehicle batteries, these sockets have a combined current rating of 24 amps thus exceeding the total charging current limit of 20 amps. However the three sockets being used are only drawing a total of 18 amps for battery charging, so that the power received from the utility does not exceed the 20-amp limit.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brett S. Squires whose telephone number is (571)272-2268. The examiner can normally be reached on 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brett S Squires  
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